

What is claimed is:

1. A method for improvement of implantation rates in a pregnant female mammal after in vitro fertilization which comprises administering to an afflicted female an amount of nitric oxide synthase substrate, a nitric oxide donor, or both, effective to raise the blood level of circulating L-arginine to at least about 50 - 5000  $\mu$ molar above the normally 50 - 1000  $\mu$ molar circulating levels and, optionally, also a progestin or, both of an estrogen and a progestin, in amounts effective to increase the pregnancy rates.
2. The method of claim 1, wherein the mammal is a non-pregnant human female suffering from infertility, or a pregnant female suffering from habitual abortions ~~or~~ or a pregnant female exhibiting symptoms of threatening abortion.
3. The method of claim 1, wherein the nitric oxide substrate is L-arginine.
4. The method of claim 1, wherein the mammal is a pregnant human female and a nitric oxide donor is administered hereto.
5. The method of claim 4, wherein the nitric oxide donor is sodium nitroprusside, nitroglycerin, glyceryltrinitrate, SIN-1, isosorbidmonoitrate or isosorbiddinitrate
6. The method of claim 4, wherein the nitric oxide donor is administered orally.
7. The method of claim 4, wherein the nitric oxide donor is administered transdermally.
8. The method of claim 1, wherein the mammal is a pregnant human female and the nitric oxide substrate or donor is administered thereto in combination with progesterone.
9. The method of claim 1, wherein the mammal is a pregnant human female and the nitric oxide substrate or donor is administered thereto in combination with progesterone and/or estradiol.
10. The method of claim 8, wherein the progestin is progesterone or hydroxyprogesterone caproate
11. The method of claim 9, wherein the estrogen is estradiol valerate
12. The method of ~~claim~~ fertility control with a nitric oxide synthase inhibitor in combination with an antiprogestin

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13. The method of claim 12, wherein the antiprogestin is mifepristone, ORG 31710, ORG 33 628, J867, CDB 2914, or ZK 137316

14. The method of claim 12, wherein the treatment is performed postcoitally

15. A pharmaceutical composition comprising an admixture of (a) a nitric oxide synthesis substrate, (b) a nitric oxide donor or both, and optionally, also at least one of (c) a progestin, (d) and an estrogen in amounts effective to increase the pregnancy rates or ameliorate the symptoms of threatening abortion in a pregnant or infertile female mammal when administered thereto in an amount effective of estrogen equivalent to 1 - 2 mg of estradiol and an amount of the progestin bioequivalent to 50 - 300 mg of injected progesterone and an amount of the nitric oxide synthase substrate, nitric oxide donor or both effective to raise the blood level of circulating L-arginine to at least about 50 - 5000  $\mu$ molar above the normally 50 - 1000  $\mu$ molar circulating levels or raise the nitric oxide donor levels to about 10nM to 100  $\mu$ molar.

16. The composition according to claim 15, wherein (a) is a nitric oxide synthesis substrate.

17. The composition according to claim 16, wherein the nitric oxide synthesis substrate (b) is L-arginine.

18. The composition according to claim 14, wherein (b) is a nitric oxide donor.

19. The composition according to claim 18, wherein the nitric oxide donor is sodium nitroprusside, nitroglycerin, glycerytrinitrate, SIN-1, isosorbide mononitrate or isosorbiddinitrate, etc.

20. The composition according to claim 15, wherein the progestin (d) is progesterone or hydroxyprogesterone caproate.

21. The composition according to claim 15, wherein the estrogen (c) is estradiol valerate.

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22. A method of improving implantation rates and/or pregnancy rates in a female mammal, comprising administering to a female mammal in whom pregnancy is desired an effective amount of

- (a) a nitric oxide synthase substrate, a nitric oxide donor, or both, optionally in combination with
- (b) a progestin, and,
- (c) optionally, in further combination with an estrogen.

23. A method of claim 22, wherein the mammal is a non-pregnant human female suffering from infertility, a pregnant female suffering from habitual abortions, or a pregnant female exhibiting symptoms of impending abortion.

24. A method of claim 22, wherein the nitric oxide synthase substrate is L-arginine.

25. A method of claim 22, wherein the mammal is a pregnant human female and a nitric oxide donor is administered thereto.

26. A method of claim 25, wherein the nitric oxide donor is sodium nitroprusside, nitroglycerin, glyceryltnitrate, SIN-1, isosorbide mononitrate or isosorbide dinitrate.

27. A method of claim 25, wherein the nitric oxide donor is administered orally.

28. A method of claim 25, wherein the nitric oxide donor is administered transdermally.

29. A method of claim 22, wherein the mammal is a pregnant human female and a nitric oxide substrate or donor is administered thereto in combination with a progestin.

30. A method of claim 22, wherein the mammal is a pregnant human female and a nitric oxide substrate or donor is administered thereto in combination with a progestin and an estrogen.

31. A method of claim 29, wherein the progestin is progesterone or hydroxy-progesterone caproate.

32. A method of claim 30, wherein the estrogen is estradiol valerate.

33. A method of fertility control for a female mammal, comprising administering to a female mammal in whom pregnancy is not desired and at risk for becoming pregnant an effective amount of nitric oxide synthase inhibitor in combination with an antiprogestin.

34. A method of claim 33, wherein the antiprogestin is mifepristone, ORG 31710, ORG 33 628, J867, CDB 2914, or ZK 137316.

35. A method of claim 33, wherein the method is performed postcoitally.

36. A method of claim 22, wherein the mammal is a human female and the amount of the nitric oxide synthase substrate, nitric oxide donor or both administered is effective to raise the blood level of circulating L-arginine in said female to at least about 50 - 5000  $\mu$ molar above the normally 50 - 1000  $\mu$ mole circulating levels.

37. A method of claim 22, wherein the mammal is a human female and the amount of the nitric oxide synthase substrate, nitric oxide donor or both administered is effective to raise the nitric oxide donor level to about 1 - 1000 nmolar.

38. A method of claim 22, wherein the mammal is a human female and the amount of progestin administered is bioequivalent to 50 - 300 mg of injected progesterone, and the amount of estrogen administered, if any, is bioequivalent to 1 - 2 mg of estradiol.

39. A pharmaceutical composition comprising an admixture of effective amounts of

- (a) a nitric oxide synthesis substrate, a nitric oxide donor or both; and
- (b) a progestin, and optionally,
- (c) an estrogen,

in amounts effective to increase the pregnancy rates or ameliorate the symptoms of impending abortion in pregnant female mammal or a female mammal with impaired fertility,

wherein the amount of nitric oxide synthase substrate, nitric oxide donor or both administered is effective to raise the blood level of circulating L-arginine in said female to whom the composition is administered to at least about 50 - 5000  $\mu$ molar above the normally 50 - 1000  $\mu$ mole circulating levels and/or is effective to raise the nitric oxide donor level to about 1 - 1000 nmolar; the amount of progestin administered is bioequivalent to 50 - 300 mg of injected progesterone; and the amount of estrogen administered, if any, is bioequivalent to 1 - 2 mg of estradiol.

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40. A composition of claim 39, wherein (a) is a nitric oxide synthase substrate.

41. A composition of claim 40, wherein the nitric oxide synthesis substrate is L-arginine.

42. A composition of claim 39, wherein (a) is a nitric oxide donor.

43. A composition of claim 42, wherein the nitric oxide donor is sodium nitroprusside, nitroglycerin, glyceryltrinitrate, SIN-1, isosorbide mononitrate or isosorbide dinitrate.

44. A composition of claim 39, wherein (b) is progesterone or hydroxyprogesterone caproate.

45. A composition of claim 39, wherein (c) is estradiol valerate.

46. A method of claim 22, wherein components (a) and (b) are administered sequentially.

47. A method of claim 22, wherein components (a) and (b) are administered simultaneously.